

STATE OF MICHIGAN
IN THE SUPREME COURT

In re Independent Citizens Redistricting
Commission for State Legislative and
Congressional District's duty to redraw
districts by November 1, 2021,

Supreme Court No. 162891

**Expedited consideration
requested under MCR 7.311(E).
Relief requested as soon as is
practicable but no later than
August 1, 2021.**

_____/

**PETITIONERS MICHIGAN INDEPENDENT CITIZENS REDISTRICTING
COMMISSION AND SECRETARY OF STATE JOCELYN BENSON'S
SUPPLEMENTAL BRIEF**

EXHIBIT LIST

A. Amended Affidavit Kimball W. Brace - Signed

AMENDED EXHIBIT A

STATE OF MICHIGAN
IN THE SUPREME COURT

In re Independent Citizens Redistricting
Commission for State Legislative and
Congressional District's duty to redraw
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_____ /

AFFIDAVIT OF KIMBALL W. BRACE

State of Michigan)

)ss

County of Ingham)

Kimball W. Brace, being duly sworn, states as follows:

1. A copy of my resume is attached as an exhibit to this affidavit. The averments in this affidavit are based on my knowledge of, and training, education and professional experience in redistricting, election administration, and the analysis and presentation of census and political data. The following is a summary of my background:

A. I am president and the authorized agent of Election Data Services Inc., ("EDS") a consulting firm that specializes in redistricting, election administration, and the analysis and presentation of census and political data.

B. I attended American University in Washington, D.C., from 1969 through 1974 (having taken a year off for the 1972 campaign), where I earned a B.A. degree in Political Science. I started EDS in 1977 and have been with the company since that time. Prior to 1977, I was a journalist and was employed by such companies as NBC News, Congressional Quarterly, and Plus Publications.

C. As president of EDS, I supervise and direct all major projects in which the company is involved. EDS has been viewed by clients, the press, academics, and the general public as a research facility and consulting firm dealing with many aspects of the electoral process. The company and its staff have been hired by state and local governments across the nation to provide software, database development services, and consulting services for the creation of districting plans and the analysis of many aspects of the redistricting, census and election process.

D. Since 1979, I, individually and with EDS, have been actively involved in many aspects of the redistricting process, having gone through four full census and

redistricting cycles. I have been a consultant to many state and local governmental organizations around the nation, providing strategic advice and consulting on redistricting matters, coordinating the development of extensive databases used in the redistricting process, creating and assisting others with the creation of districting plans, and analyzing many aspects of districts and district configurations, including conducting racial bloc voting analysis. Over the past 44 years, EDS' clients for redistricting services have come from more than half the states in the nation. Currently, we have also been retained by several states (including Michigan) for the planning and database activities associated with the 2020 redistricting process. In addition, over the past four decades I have been called upon to provide reports, expert witness testimony, and assistance to attorneys in more than 75 different court cases.

E. I frequently give speeches to groups and organizations and participate in numerous conferences and panels on various aspects of apportionment, redistricting, and the census. Since the early 1980s, I have been a regular participant and speaker at annual and bi-annual meetings of the Task Force on Redistricting of the National Conference of State Legislatures ("NCSL"). I have also been on their faculty, as NCSL has conducted five regional "Get Ready for Redistricting" seminars each decade since 1980. I was also appointed by the U.S. Secretary of Commerce to the 2010 Census Advisory Committee, a 20-person advisory board to the Director of the Census Bureau. Earlier last year I was asked to be NCSL's representative on a series of half-day small-group expert meetings, arranged by the Committee on National Statistics (CNSTAT), to delve deeply into and provide informal discussion/feedback with Census Bureau staff as they continue to develop the differential privacy-based Disclosure Avoidance System for the 2020 census. I am repeatedly called upon by members of the press with questions on redistricting, reapportionment, the census, election administration issues, and politics in general.

F. Over the decades our involvement with state governments' redistricting efforts includes, but is not limited to: 2001 election databases for both the Arizona Independent Redistricting Commission and the Arizona Legislature Legislative Council; 1989 database and redistricting plan development of state senate and house districts for the Kansas Legislature; 1991-1993 and 2010-2012 database and redistricting plan development of congressional, state senate and house districts for the Massachusetts General Court Joint Reapportionment Committees; 1981-1982 database and redistricting plan development of congressional, state senate and house districts for the Michigan Legislature; 2016-current, 2010-2012, 2001-02 and 1991-92 database and redistricting plan development of congressional, state senate and house districts for the Rhode Island General Assembly and Reapportionment Commissions; and 1983-84 redistricting plan development and analysis of state senate districts for the State of South Carolina.

G. For the past four decades I and EDS have studied and issued yearly reports on the apportionment process using new population estimates released by the

Census Bureau and private demographic firms. All our reports can be found at our website: www.electiondataservices.com, under the "Research" tab. We have become a staple for the press and others to cite when looking at the shift that is occurring in population between different states. Other publications I have authored, or co-authored, include: "EAC Survey Sheds Light on Election Administration", *Roll Call*, October 27, 2005 (with Michael McDonald); *Developing a Statewide Voter Registration Database: Procedures, Alternatives, and General Models*, by Kimball W. Brace and M. Glenn Newkirk, edited by William Kimberling, (Washington, D.C.: Federal Election Commission, Office of Election Administration, Autumn 1997); *The Election Data Book: A Statistical Portrait of Voting in America*, 1992, Kimball W. Brace, ed., (Bernan Press, 1993); "Numbers, Colors, and Shapes in Redistricting," *State Government News*, December 1991 (with D. Chapin); "Redistricting Roulette," *Campaigns and Elections*, March 1991 (with D. Chapin); "Redistricting Guidelines: A Summary", presented to the Reapportionment Task Force, National Conference on State Legislatures, November 9, 1990 (with D. Chapin and J.); "The 65 Percent Rule in Legislative Districting for Racial Minorities: The Mathematics of Minority Voting Equality," *Law and Policy*, January 1988 (with B. Grofman, L. Handley, and R. Niemi); and "New Census Tools," *American Demographics*, July/August 1980.

2. Based upon my knowledge, training, education and professional experience the Michigan Independent Citizens Redistricting Commission ("MICRC") has engaged EDS as its Line Drawing and Redistricting Technical Services consultant for the redistricting that occurs every decade after each census cycle. In addition to my professional background and experience, I have reviewed the pleadings in this case and the reports submitted to the MICRC by its General Counsel: MICRC Authorization of Proposed Date(s) for Inclusion in the Petition to the Michigan Supreme Court, dated March 23, 2021; and Updates on Legacy Format Data and the Petition to Michigan Supreme Court for Relief from the November 1 Deadline, dated April 14, 2021.

3. The contract between the MICRC and EDS was finalized, executed and effective on May 25, 2021.

4. The 2020 census data necessary for redistricting is scheduled to be released as follows:

A. Pursuant to 13 USC § 141(b), the tabulation of total population for apportionment of congressional representatives is required to be reported to the President of the United States on or before December 31 in the year the Census is taken. However, because of the COVID virus, delays implemented by the previous Administration for the 2020 Census cycle, and resulting litigation, this data was released on April 26, 2020, nearly four (4) months behind its scheduled release date.

In contrast, the 2010 Michigan apportionment calculations were released by the U.S. Census Bureau on December 21, 2010, ahead of the deadlines expected.

B. Pursuant to 13 USC § 141(c), the Census Bureau is to provide the small area geography data necessary for the states to conduct legislative redistricting (known as P.L. 94-171 data) no later than one year from census day. This normally would have meant states would receive the PL file on or before March 31, 2021. As noted above the COVID virus caused delays in the actual taking of the Census, which were further complicated by administrative delays and subsequent litigation. This has meant that as of today, June 2, 2021, the 2020 Census P.L. 94-171 data has still not been released. The Census Bureau has informed the states that the PL file will be available in user-friendly format on September 30, 2021, a full six (6) months after its scheduled release date. In contrast, the 2010 Michigan redistricting data set was shipped to Lansing by the Census Bureau on March 21, 2011 and receipt was acknowledged on March 22, 2011.

5. Based on my professional experience in congressional and state legislative redistricting over the past 44 years, the census data needed for redistricting has never been delayed in delivery in modern times. This unprecedented delay has caused severe problems for a number of states and local governments resulting in a reduction in the time provided for the complex and data-intensive redistricting process to occur.

6. I have attached an Appendix to this affidavit which goes through all the steps governments need to undertake to understand, compile and build a system to deal with the complexities of redistricting. The marrying together of geographies and data from both the Census Bureau and state and local governments have presented difficulties for many a government or organization, particularly when they are newly instituted in this process. Many states and large governments take a year or two to build their systems.

7. Recognizing the stress this placed on nationwide redistricting efforts, the U.S. Census Bureau has indicated it will release preliminary data known as legacy format summary redistricting data files ("legacy format data") which will need to be processed and tabulated prior to its use for redistricting purposes. While the Census Bureau has informed states that the legacy format data will be available on August 16, 2021, the official, tabulated P.L. 94-171 redistricting data files are still scheduled for release on September 30, 2021.

8. It is my opinion that the Commission may be able to perform significant work using data in this "legacy" format from the U.S. Census Bureau. Legacy format data is a non-tabulated version of census data that must be processed before use. The data in the legacy format files is identical to the PL 94-171 redistricting data files expected to be delivered by September 30 and subject to the same exacting quality assurance processes. The sole difference is in the format the census data is presented.

9. However, the anticipated release and subsequent use of legacy format data will not have a meaningful impact on the Commission's ability to perform its duties under the current constitutionally imposed deadline. Assuming the legacy format data is released on August 16, the additional time gained by the Commission remains insufficient to meet the November 1 deadline and needs to be weighed against any risk of utilizing non-tabulated data. If the P.L. 94-171 tabulated data were timely received, the Commission would have nearly six months to conduct its work; here, if compelled to use unreconciled legacy format data to meet the current November 1 deadline, the Commission would have less than one month to draft and publish proposed plans for congressional and state legislative districts.

10. While the underlying data is identical, to eliminate any risk in using the non-tabulated legacy format data, EDS has confirmed with the MICRC that it will reconcile the legacy format data with the of tabulated P.L. 94-171 data and materials set for release by September 30 to verify data integrity for use in adoption of proposed plans and, ultimately, final redistricting plans for congressional and state legislative districts. This reconciliation process is expected to take between 7 to 10 days, making the data available for use by the MICRC between August 23 and August 26.

11. Therefore, based on the current November 1 deadline, I anticipate the use of legacy format data would likely provide the Commission approximately 22 days to conduct its work prior to the September 17, 2021, publication deadline that begins the 45-day public comment period. This is still insufficient time for the 13-member Commission to analyze underlying data, receive the results of racial bloc voting analyses, perform its work in mapping district lines for congressional and state legislative districts, continue to receive and integrate public comment during the mapping process and, by majority vote, agree on proposed plans for publication in less than one month in order to meet the 45-day publication requirements, and hold the second round of constitutionally required public hearings in advance of a final vote to adopt district plans.

12. During this time-table EDS will also be conducting extensive analysis of the data to determine whether there might be any problems with the latest census data compared to what is expected. Other states are also reporting a need to check the Census Data for any unusual or unknown patterns that might turn up in the information. Comparisons between the P.L. 94-171 data and population estimates released by the Census Bureau and private demographic companies will also need to take place. The only information released by the Census Bureau to date on their process has been at the total state level, but demographers want information within their respective states. For example, for Michigan, have African American communities in Detroit been fully counted or do the numbers appear to be below what is expected. Arab and Hispanic communities will also need to be studied.

13. Based on my review of the Michigan Constitution, prior to a vote to adopt any plan, the MICRC is required to provide public notice of each plan that will be voted on and provide a minimum of 45 days for public comment on the proposed plan(s). Const 1963, article 4, § 6(7), (14). This would require the proposed plan(s) be published and available for public comment on or before Friday, September 17, 2021 (45 days prior to November 1).¹ It is my opinion that it will be impossible to accomplish the tasks outlined in the Appendix, let alone properly draw district maps, given the timing of the expected release of both the legacy format data on August 16, 2021 and the P.L. 94-171 redistricting files on September 30, 2021, by the publication deadline of September 17, 2021 and the deadline to adopt final plans of November 1, 2021.

14. I am aware that the MICRC and Secretary of State Benson have jointly petitioned this Court for relief from the November 1 constitutional deadline to adopt final maps to accommodate the unprecedented delay in release of 2020 census data. If relief is not granted and the MICRC must use only legacy data to draw maps, I believe it is highly unlikely if not impossible that the State of Michigan and the Commission will be able to accomplish all the steps outlined in this Affidavit in the anticipated 22-day timeframe. In addition, not feeling confident in the data will only raise questions on the validity of the final three maps (Congressional, State Senate and State House) required to be drawn by the Commission.

Further the deponent sayeth not.

Signed: _____

Kimball W. Brace

Notary Public:

Sworn before me on this 2nd day of June, 2021.

By: _____

Notary Public

Prince William County, State of Virginia



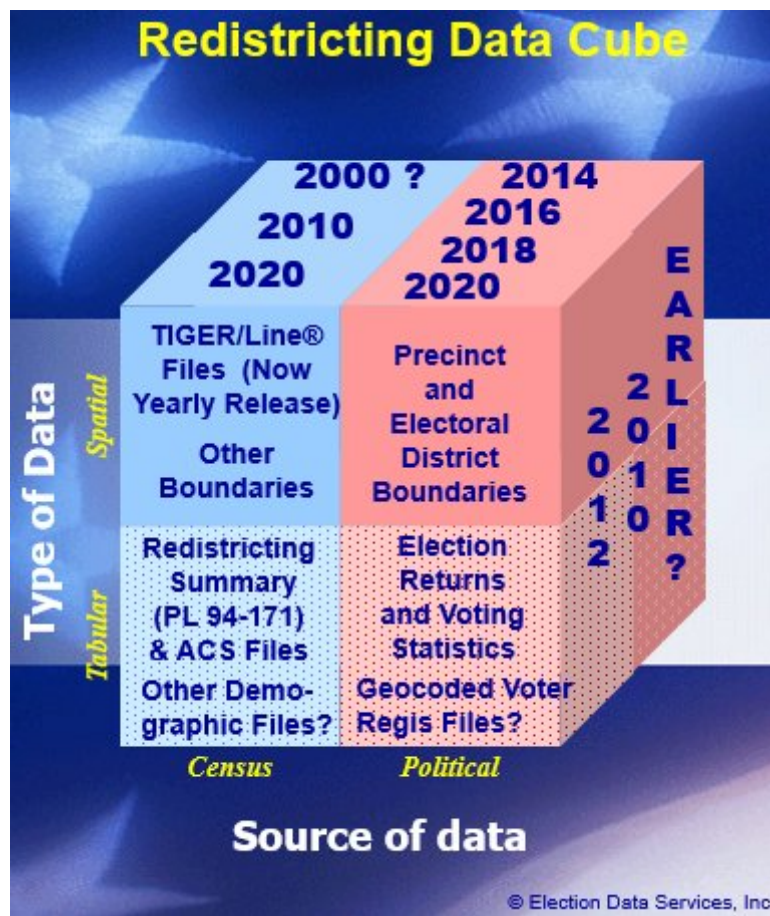
¹ It is also important to note that article 4, §6, (14)(b) requires, in part, that the census data "necessary to accurately describe the plan and verify the population of each district" is published in advance of the 45-day public comment window.

Appendix

Redistricting Databases

The first effort of any redistricting work is to compile extensive databases of the components needed for use in redistricting. Generally, these databases merge four different elements through the use of geography. Over the past three decades I have spoken before many groups and courts about what I have termed the “redistricting data cube”. The sketch below depicts that cube:

Figure 1
Redistricting Data Cube



Redistricting issues always deal with territory. In previous decades, the Census Bureau depicted data collection areas on paper maps. In 1990, the Bureau was able to create an electronic map of the entire country, called the Topologically Integrated Geographic Encoding and Referencing system, or TIGER. Census geography in the form of TIGER files becomes the **first element of the data cube**.

The TIGER files are actually massive databases in themselves and encompass all the lines that one sees on a map. These lines or “segments” are depicted with a latitude and a longitude coordinate point at the beginning and end of each line segment. These line segments have no population data associated with them, but they do have an extensive set of other attribute information. For example, each line segment has information about whether it is a stream, road, railroad, or power line, etc. If the segment is a road or stream, there is also information about its name. If the segment is a road, there is also information in many instances about address ranges.

All line segments have geographic codes that identify the census tract and block on the left and right sides of the line. If one were to travel along a series of line segments and make a right turn at the end of each segment onto an intersecting line segment, one would eventually return to the starting point. Upon arrival at the starting point, one would be “closing” a polygon. These resulting polygons would form the basic census block. Census blocks are linked to block-level population and demographic data, but these numeric data are not in the TIGER files.

This numeric data, the **second element in the data cube**, is reported by the Census Bureau after each decennial census and consists of population and demographic counts associated with each census tract and block in each state. This data is first released for redistricting purposes in a computer file called the Census Redistricting (PL 94–171) Summary File. For each census tract and block there are both total population and voting age population (18 years old and over) counts, along with sub-counts of the different racial and Hispanic origin categories tabulated by the Census Bureau. For the first time in the 2000 Census, persons could choose multiple racial or ethnic origins, which caused the PL 94–171 population files to expand from 12 columns of data in 1990 to 291 columns of data in 2000 and 2010. Despite this seemingly massive amount of data, it is generally not until the year ending in a “2” when more detailed demographic data, such as income or education information, is released by the Census Bureau.

These two Census computer files (TIGER and PL) form the heart of any redistricting effort and are absolutely necessary for drawing and analyzing districts. While the TIGER files for Michigan were released in February, 2021, the PL population files have not been released to date and therefore redistricting in Michigan cannot begin.

If one wishes to perform an electoral analysis of voting behavior for a given area, one must also have election returns. This is the **third element in the data cube**. Usually, these returns have to be collected from each county in a state, although more states are centralizing that collection effort. However, when

redistricting deals with local contests, returns from multiple years have to be collected from local election offices and keypunched to perform the analysis.

Election returns alone are not enough to do the racial voting or political analysis that is required in a redistricting and/or court case setting. One must know where the election returns come from—that is, from what part of a county or city. This is where the **fourth element of the data cube**—precinct maps—comes into play. Precinct maps for each election year have to be collected and analyzed to determine the extent of change since the previous year.

It is standard practice across the United States for county governments to make massive precinct changes subsequent to statewide redistricting that occur in the years ending in “1” and “2”. In addition, many larger jurisdictions change precinct boundaries on a regular basis as population shifts occur or there is a need to relocate a polling place. As a result, to analyze election contests that occur over time, one has to determine the makeup of each precinct in each election in which the contests were held.

Election Data Services (“EDS”) has been collecting precinct maps from around the nation since the early 1980s. To study racial bloc voting or perform other types of electoral analysis, the racial makeup of the people in each precinct needs to be determined and matched up with election returns. Unfortunately, the Census Bureau reports demographic data for only those precincts that were in existence in the year ending with “8”, before the decennial census is conducted. To merge racial demographic data from the Census Bureau with the configuration of the precincts used in each election over the decade, one must overlay the precinct map boundaries that existed in each election on top of the census geographic boundaries.

EDS has developed computer programs to assist with this process, whereby an operator assigns census tracts and blocks to individual precincts using GIS technology. Once this block-to-precinct equivalency has been developed, additional computer programs can tally up the census demographic and racial data from the blocks to the precinct summary level. EDS has loaded these files into various computer databases compiled over the years for such analysis. This important step is also needed to properly disaggregate an election’s results to the census block, so that the returns can be re-aggregated to a district configuration when you are doing redistricting or analyzing a plan’s configuration.

EDS has spent thousands of hours of staff time compiling and putting together extensive databases of state and local election returns and combining the geography of precincts with census geography. These types of databases are the central component necessary to determine the extent to which racial groups vote differently. Combining all this information creates a massive database that is internal to EDS. Additional programs have been created to extract individual election contests from

the massive internal database and format them into smaller ASCII datasets that can be read by other programs, such as SPSS or S-Plus. SPSS (which stands for Statistical Package for the Social Sciences) and S-Plus are standard software programs used by many political scientists to perform racial bloc voting analyses.

EDS has built its reputation over the past 44 years and has been committed in this project to compiling a complete and accurate database of election returns and demographic characteristics to perform any voting analysis. Without a constant amount of cross-checking and quality control, an accurate description of the voting patterns of different groups would not be possible.

The development of actual districts uses the same concept of building an equivalency between the census geography of tracts and blocks or the political geography of precincts and the districts. The 1990, 2000 and 2010 rounds of redistricting were able to take advantage of the widespread use of GIS technology. For the first time, most people were able to use computers to see the districts they were developing, and to have the immediate capability of analyzing the district configurations in terms of racial or political data. In these instances, the GIS acts as a huge adding machine, tallying the racial and/or political makeup of each district. This basic information should be provided for any plan developed or ultimately analyzed with a GIS.

The equivalency between some commonly agreed to base geography and the proposed districts forms the basic description of a districting plan. In order to perform an analysis of a plan, one must know what makes up that plan. If parties in a redistricting process do not provide such an equivalency, then any attempt to perform meaningful, accurate and complete analysis is impossible, especially in a 48-hour timetable. A quick and accurate analysis is not possible if parties simply provide a paper listing of what makes up a proposed district, or a paper map.

An equivalency should be provided in a computer-readable form. In the late 1980s, the Reapportionment Task Force of the National Conference of State Legislatures agreed to adopt a common format for an equivalency file. This is generically called the "DOJ format", because of a requirement for many states to submit electoral changes (like districting plans) to the Department of Justice for Section 5 pre-clearance. Most computer redistricting systems developed for the last three decades of redistricting have the capability of producing such an equivalency file.

Census Data Compilation and Analysis

As noted earlier, census data is one of the major elements of the “datacube.” With regard to demographic information and race, the 2010 and 2020 Census asked each individual two major questions. First, they asked whether the person was Hispanic or not (the Census Bureau has not considered Hispanic as being a race)?

Is this person of Hispanic, Latino, or Spanish origin?

☐ No, not of Hispanic, Latino, or Spanish origin

☐ Yes, Mexican, Mexican Am., Chicano

☐ Yes, Puerto Rican

☐ Yes, Cuban

☐ Yes, another Hispanic, Latino, or Spanish origin — *Print, for example, Salvadoran, Dominican, Colombian, Guatemalan, Spaniard, Ecuadorian, etc.* ↗

Figure 12

The actual Hispanic question in the questionnaire for 2020 appeared as noted in Figure 2, to the left.

Second, they asked what was the person’s race? This two-part question format has been used since Hispanic origin was first asked of every individual in 1980. The actual Hispanic and race questions in the

questionnaire for 2010 appeared as noted in Figure 2, below.

Figure 3 in this Affidavit (is Figure 1 in Census Report)

Since 1980 the Census Bureau has taken the results of the race question (Question 6 at right) and created counts of five major racial groups along with a catch-all of “some other race”. The five major racial groups were “white”, “black or African-American”, “American Indian or Alaska Native”, “Asian” (which combined the answers of Asian American Indian, Chinese, Filipino, Korean, Japanese, Vietnamese, and Other Asian), and “Native Hawaiian or Other Pacific Islander” (which combined the answers of Pacific Islander, Native Hawaiian, Guamanian or Chamorro, Samoan, and Other Pacific Islander). Traditionally, these five major racial groups, along with “some other race” would add to 100% of the total population reported by the census.

The Census Bureau also asked individuals whether they were of Hispanic origin (Question 5, in Figure 2, above). Because the Census Bureau and the federal government

Figure 1.
Reproduction of the Questions on Hispanic Origin and Race From the 2010 Census

→ NOTE: Please answer BOTH Question 5 about Hispanic origin and Question 6 about race. For this census, Hispanic origins are not races.

5. Is this person of Hispanic, Latino, or Spanish origin?

☐ No, not of Hispanic, Latino, or Spanish origin

☐ Yes, Mexican, Mexican Am., Chicano

☐ Yes, Puerto Rican

☐ Yes, Cuban

☐ Yes, another Hispanic, Latino, or Spanish origin — *Print origin, for example, Argentinian, Colombian, Dominican, Nicaraguan, Salvadoran, Spaniard, and so on.* ↗

6. What is this person’s race? Mark ☒ one or more boxes.

☐ White

☐ Black, African Am., or Negro

☐ American Indian or Alaska Native — *Print name of enrolled or principal tribe.* ↗

☐ Asian Indian ☐ Japanese ☐ Native Hawaiian

☐ Chinese ☐ Korean ☐ Guamanian or Chamorro

☐ Filipino ☐ Vietnamese ☐ Samoan

☐ Other Asian — *Print race, for example, Hmong, Laotian, Thai, Pakistani, Cambodian, and so on.* ↗

☐ Other Pacific Islander — *Print race, for example, Fijian, Tongan, and so on.* ↗

☐ Some other race — *Print race.* ↗

Source: U.S. Census Bureau, 2010 Census questionnaire.

for each of the last four censuses have concluded that “Hispanic Origin” is not a racial category (anyone of any race can also be Hispanic), the Census Bureau provides cross-tabulations in its PL 94-171 data tables. Utilizing these cross-tabulations, EDS has traditionally developed its datasets by showing Hispanic Origin as if it were a race, and then removing Hispanics from the individual racial data. As such, we report Non-Hispanic White, instead of White; Non-Hispanic Black, instead of Blacks; Non-Hispanic Asian; instead of Asians; and so-forth. When the racial data and Hispanic Origin are reported in this manner, the groups add to 100 percent of the population.

Post census studies have shown that Hispanics have tended to divide their racial designation mainly between “Some other race” and “white” in roughly equal proportions. As a result, when we take out Hispanics from their relative racial groups in order to treat Hispanic as if it was a race, then the largest decreases occur in both the “White” and the “Some Other Race” categories.

The 2000 and 2010 censuses were a marked departure from earlier censuses on the reporting of racial data. In previous decades, individuals answering the Census were supposed to mark only one racial category. However, beginning with the 2000 Census, individuals could mark any number of racial categories (up to all six if they wanted), mainly due to the growth of multi-racial families in American society. This produced unique data issues concerning racial breakdowns and how they were reported. As one of the very few organizations involved in redistricting around the nation, EDS was closely involved with census personnel in researching and understanding the ramifications of the new data structures.

There are three basic ways to calculate the racial breakdowns for the 2000 and 2010 census. The first is to exclude any individuals who have marked more than one racial category from the basic racial definitions and put these individuals into a separate “multiple-race” category. This tends to create a bottom level of racial categorization for individual race groups, but one that is more compatible with the numbers that were reported in previous censuses. EDS designated these categories as “**Race-Alone**” and they occupy tab or table 1 in many of our reports.

The second method of calculation is to include in the individual race groups any individual who marked that race group alone, plus any individual who marked that race group in combination with any other racial group(s). This tends to create the maximum number of individuals for a racial group, but it also means that the totals of all racial groups added together will result in more than 100 percent of the population being reported. EDS designated these categories as “**Combo**” or “**Max**” and they occupy tab or table 2 in many of our reports. In the last several decades there has been an increase in the numbers of individuals who have reported being of more than one race. As more families become truly multi-racial, it is expected the 2020 Census will show a continued increase in this “Combo” category.

The third method of calculation was recommended by the Federal Office of Management and Budget (OMB). In a Federal Register notice published in March 2000 (at the tail end of the Clinton Administration), OMB laid out how federal agencies should use racial data from the 2000 Census (no fundamental change was made in this directive for the 2010 nor 2020 Censuses). In essence, the OMB recommended that any individuals who marked themselves as both “White” and some other minority race, should be counted as part of that other minority race. This increased the numbers reported for the racial groups above the “race-alone” categories, but actually excluded individuals who marked themselves as being in two different minority groups. We have found in our research that this method of calculation tends to fall in between the other two methods. EDS designated these categories as “**OMB**” and they occupy tab or table 3 in many of our data reports, or “Black White” in the “A vs B” reports.

EDSs’ standard dataset incorporates all three methods of calculating racial data from the 2000, 2010 and 2020 censuses. In this manner, we can compare the different methods and how district configurations are affected.

VITA

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Kimball Brace is the president of Election Data Services Inc., a consulting firm that specializes in redistricting, election administration, and the analysis and presentation of census and political data. Mr. Brace graduated from the American University in Washington, D.C., (B.A., Political Science) in 1974 and founded Election Data Services in 1977.

Redistricting Consulting

Activities include software development; construction of geographic, demographic, or election databases; development and analysis of alternative redistricting plans; general consulting, and onsite technical assistance with redistricting operations.

Congressional and Legislative Redistricting

Arizona Independent Redistricting Commission: Election database, 2001

Arizona Legislature, Legislative Council: Election database, 2001

Colorado General Assembly, Legislative Council: Geographic, demographic, and election databases, 1990–91

Connecticut General Assembly

- Joint Committee on Legislative Management: Election database, 2001; and software, databases, general consulting, and onsite technical assistance, 1990–91
- Senate and House Democratic Caucuses: Demographic database and consulting, 2001

Florida Legislature, House of Rep.: Geographic, demographic, and election databases, 1989–92

Illinois General Assembly

- Speaker of House and Senate Minority Leader: Software, databases, general consulting, and onsite technical assistance, 2000–02,
- Speaker of House and President of Senate: Software, databases, general consulting, and onsite technical assistance, 2018-current, 2009-2012, 1990–92, and 1981-82

Iowa General Assembly, Legislative Service Bureau and Legislative Council: Software, databases, general consulting, and onsite technical assistance, 2000–01 and 1990–91

Kansas Legislature: Databases and plan development (state senate and house districts), 1989

Massachusetts General Court

- Senate Democratic caucus: Election database and general consulting, 2001–02
- Joint Reapportionment Committees: Databases and plan development (cong., state senate, and state house districts), 1991–93, 2010-2012

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(Redistricting Consulting, cont.)

Michigan Legislature: Geographic, demographic, and election databases, 1990–92; databases and plan development (cong., state senate, and state house districts), 1981–82

Missouri Redistricting Commission: General consulting, 1991–92

Commonwealth of Pennsylvania: General consulting, 1992

Rhode Island General Assembly and Reapportionment Commissions

- Software, databases, plan development, and onsite assistance (cong., state senate, and state house districts), 2016– current, 2010–2012, 2001–02 and 1991–92
- Databases and plan development (state senate districts), 1982–83

State of South Carolina: Plan development and analysis (senate), U.S. Dept. of Justice, 1983–84

Local Government Redistricting

Orange County, Calif.: Plan development (county board), 1991–92

City of Bridgeport, Conn.: Databases and plan development (city council), 2011–2012 and 2002–03

Cook County, Ill.: Software, databases, and general consulting (county board), 2010–2012, 2001–02, 1992–1993, and 1989

Lake County, Ill.: Databases and plan development (county board), 2011 and 1981

City of Chicago, Ill.: Software, databases, general consulting, and onsite technical assistance (city wards), 2010–2012, 2001–02 and 1991–92

City of North Chicago, Ill.: Databases and plan development (city council), 1991 and 1983

City of Annapolis, Md.: Databases and plan development (city council), 1984

City of Boston, Mass.: Databases and plan development (city council), 2011–2012, 2001–2002, and 1993

City of New Rochelle, N.Y.: Databases and plan development (city council), 1991–92

City of New York, N.Y.: Databases and plan development (city council), 1990–91

Cities of Pawtucket, Providence, East Providence, and Warwick, and town of North Providence, R.I.: Databases and plan development (city wards and voting districts), 2011–2012, 2002

City of Woonsocket and towns of Charlestown, Johnston, Lincoln, Scituate and Westerly, R.I.: Databases and plan development (voting districts), 2011–2012, 2002; also Westerly 1993

City of Houston, Tex.: Databases and plan development (city council), 1979 — recommended by U.S. Department of Justice

City of Norfolk, Va.: Databases and plan development (city council), 1983–84 — for Lawyers' Committee for Civil Rights

Virginia Beach, Va.: Databases and plan development (city council), 2011–2012, 2001–02, 1995, and 1993

Other Activities

International Foundation for Electoral Systems (IFES) and U.S. Department of State: redistricting seminar, Almaty, Kazakhstan, 1995

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Library of Congress, Congressional Research Service: Consulting on reapportionment, redistricting, voting behavior and election administration

National Conference of State Legislatures (NCSL): Numerous presentations on variety of redistricting and election administration topics, 1980 - current

Election Administration Consulting

Activities include seminars on election administration topics and studies on voting behavior, voting equipment, and voter registration systems.

Prince William County, VA:

2013 – Appointed by Board of County Supervisors to 15 member Task Force on Long Lines following 2012 election. Asked and appointed by County's Electoral Board to be Acting General Registrar for 5-month period between full-time Registrars.

2008 - current – poll worker and now chief judge for various precincts in county

U.S. Election Assistance Commission (EAC): Served as subcontractor to prime contractors who compiled survey results from 2008 and 2010 Election Administration and Voting Survey.

U.S. Election Assistance Commission (EAC): Compile, analyze, and report the results of a survey distributed to state election directors during FY–2007. Survey results were presented in the following reports of the EAC: *The Impact of the National Voter Registration Act of 1993 on the Administration of Elections for Federal Office, 2005–2006, A Report to the 110th Congress*, June 30, 2007; *Uniformed and Overseas Citizens Absentee Voting Act (UOCAVA), Survey Report Findings*, September, 2007; and *The 2006 Election Administration and Voting Survey, A Summary of Key Findings*, December, 2007.

U.S. Election Assistance Commission (EAC): Compile, analyze, and report the results of three surveys distributed to state election directors during FY–2005: Election Day, Military and Overseas Absentee Ballot (UOCAVA), and Voter Registration (NVRA) Surveys. Survey results were presented in the following reports: *Final Report of the 2004 Election Day Survey*, by Kimball W. Brace and Dr. Michael P. McDonald, September 27, 2005; and *Impact of the National Voter Registration Act of 1993 on the Administration of Elections for Federal Office, 2003–2004, A Report to the 109th Congress*, June 30, 2005.

Rhode Island Secretary of State: Verification of precinct and district assignment codes in municipal registered voter files and production of street files for a statewide voter registration database, on-going maintenance of street file, 2004-2006, 2008-2014, 2016-2017.

Rhode Island Secretary of State, State Board of Elections & all cities & towns: production of precinct maps statewide, 2012, 2002, 1992

District of Columbia, Board of Elections and Ethics (DCBOEE): Verification of election ward, Advisory Neighborhood Commission (ANC), and Single-Member District (SMD) boundaries and production of a new street locator, 2003. Similar project, 1993.

Harris County, Tex.: Analysis of census demographics to identify precincts with language minority populations requiring bilingual assistance, 2002–03

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(Election Administration Consulting, cont.)

Cook County, Ill., Election Department and Chicago Board of Election Commissioners:

- Analysis of census demographics to identify precincts with language minority populations requiring bilingual assistance, 2019, 2010-2013, 2002-03
- Study on voting equipment usage and evaluation of punch card voting system, 1997

Chicago Board of Election Commissioners: Worked with Executive Director & staff in Mapping Dept. to redraw citywide precincts, eliminate over 600 to save costs, 2011-12

Library of Congress, Congressional Research Service: Nationwide, biannual studies on voter registration and turnout rates, 1978-2002

U.S. General Accounting Office (GAO), U.S. Dept. of Justice, and numerous voting equipment vendors and media: Data on voting equipment usage throughout the United States, 1980-present

Needs assessments and systems requirement analyses for the development of statewide voter registration systems:

- Illinois State Board of Elections: 1997
- North Carolina State Board of Elections, 1995
- Secretary of Commonwealth of Pennsylvania, 1996

Federal Election Commission, Office of Election Administration:

- Study on integrating local voter registration databases into statewide systems, 1995
- Nationwide workshops on election administration topics, 1979-80
- Study on use of statistics by local election offices, 1978-79

Cuyahoga County, Ohio, Board of Elections: Feasibility study on voting equipment, 1979

Winograd Commission, Democratic National Committee: Analysis of voting patterns, voter registration and turnout rates, and campaign expenditures from 1976 primary elections

Mapping and GIS

Activities include mapping and GIS software development (geographic information systems) for election administration and updating TIGER/Line files for the decennial census.

2000 Census Transportation Planning Package (CTPP), 1998-99: GIS software for the U.S. Department of Transportation to distribute to 400 metropolitan planning organizations (MPOs) and state transportation departments for mapping traffic analysis zones (TAZs) for the 2000 census; provided technical software support to MPOs

Census 2000, 2010 and 2020 Redistricting Data Program, Block Boundary Suggestion Project (Phase 1) and Voting District Project (Phase 2), 1995-99: GIS software and provided software, databases, and technical software support to the following program participants:

- Alaska Department of Labor
- Connecticut Joint Committee on Legislative Management
- Illinois State Board of Elections
- Indiana Legislative Services Agency
- Iowa Legislative Service Bureau

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(Mapping & GIS Support, cont.)

- New Mexico Legislative Council Service
- Rhode Island General Assembly
- Virginia Division of Legislative Services

Developed PRECIS® Precinct Information System—GIS software to delineate voting precinct boundaries—and delivered software, databases, and technical software support to the following state and local election organizations (with date of installation):

- Cook County, Ill., Department of Elections (1993)
- Marion County, Fla., Supervisor of Elections (1995)
- Berks County Clerk, Penn. (1995)
- Hamilton County, Ohio, Board of Elections (1997)
- Brevard County, Fla., Supervisor of Elections (1999)
- Osceola County, Fla., Supervisor of Elections (1999)
- Multnomah County, Ore, Elections Division (1999)
- Chatham County, Ga., Board of Elections (2000)
- City of Chicago, Ill., Board of Election Commissioners (2000)
- Mahoning County, Ohio, Board of Elections (2000)
- Iowa Secretary of State, Election and Voter Registrations Divisions (2001)
- Woodbury County, Iowa, Elections Department (2001)
- Franklin County, Ohio, Board of Elections (2001)
- Cobb County, Ga., Board of Elections and Voter Registration (2002)

Illinois State Board of Elections, Chicago Board of Election Commissioners, and Cook County Election Department: Detailed maps of congressional, legislative, judicial districts, 1992

Associated Press: Development of election night mapping system, 1994

Litigation Support

Activities include data analysis, preparation of court documents and expert witness testimony. Areas of expertise include the census, demographic databases, district compactness and contiguity, racial bloc voting, communities of interest, and voting systems. Redistricting litigation activities also include database construction and the preparation of substitute plans.

State of Alabama vs. US Department of Commerce, et al (2019-2020) apportionment & citizenship data

NAACP vs. Denise Merrill, CT Secretary of State, et al (2019-2020) state legislative redistricting and prisoner populations

Latasha Holloway, et al. v. City of Virginia Beach, VA (2019) city council redistricting

Joseph V. Aguirre vs. City of Placentia, CA (2018-2019), city council redistricting

Davidson, et al & ACLU of Rhode Island vs. City of Cranston, RI (2014-16), city council & school committee redistricting with prisoner populations.

Navaho Nation v. San Juan County, UT (2014-17) county commissioner & school board districts.

Michael Puyana vs. State of Rhode Island (2012) state legislature redistricting

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(Litigation Support, cont.)

United States of America v. Osceola County, Florida, (2006), county commissioner districts.

Deeds vs McDonnell (2005), Va. Attorney General Recount

Indiana Democratic Party, et al., v. Todd Rokita, et al. (2005), voter identification.

Linda Shade v. Maryland State Board of Elections (2004), electronic voting systems

Gongaley v. City of Aurora, Ill. (2003), city council districts

State of Indiana v. Sadler (2003), ballot design (city of Indianapolis-Marion County, Ind.)

Peterson v. Borst (2002–03), city-council districts (city of Indianapolis-Marion County, Ind.)

New Rochelle Voter Defense Fund v. City of New Rochelle, City Council of New Rochelle, and Westchester County Board Of Elections (2003), city council districts (New York)

Charles Daniels and Eric Torres v. City of Milwaukee Common Council (2003), council districts (Wisconsin)

The Louisiana House of Representatives v. Ashcroft (2002–03), state house districts

Camacho v. Galvin and Black Political Caucus v. Galvin (2002–03), state house districts (Massachusetts)

Latino Voting Rights Committee of Rhode Island, et al., v. Edward S. Inman, III, et al. (2002–03), state senate districts

Metts, v. Harmon, Almond, and Harwood, et al. (2002–03), state senate districts (Rhode Island)

Joseph F. Parella, et al. v. William Irons, et al. (2002–03), state senate districts (Rhode Island)

Jackson v. County of Kankakee (2001–02), county commissioner districts (Illinois)

Corbett, et al., v. Sullivan, et al. (2002), commissioner districts (St Louis County, Missouri)

Harold Frank, et al., v. Forest County, et al. (2001–02), county commissioner districts (Wisc.)

Albert Gore, Jr., et al., v. Katherine Harris as Secretary of State, State of Florida, et al., and The Miami Dade County Canvassing Board, et al., and The Nassau County Canvassing Board, et al., and The Palm Beach County Canvassing Board, et al., and George W. Bush, et al (2000), voting equipment design — Leon County, Fla., Circuit Court hearing, December 2, 2000, on disputed ballots in Broward, Volusia, Miami-Dade, and Palm Beach counties from the November 7, 2000, presidential election.

Barnett v. Daley/PACI v. Daley/Bonilla v. Chicago City Council (1992–98), city wards

Donald Moon, et al. v. M. Bruce Meadows, etc and Curtis W. Harris, et al. (1996–98), congressional districts (Virginia)

Melvin R. Simpson, et al. v. City of Hampton, et al. (1996–97), city council districts (Va.)

Vera vs. Bush (1996), Texas redistricting

In the Matter of the Redistricting of Shawnee County Kansas and Kingman, et al. v. Board of County Commissioners of Shawnee County, Kansas (1996), commissioner districts

Vecinos de Barrio Uno v. City of Holyoke (1992–96), city council districts (Massachusetts)

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(Litigation Support, cont.)

Torres v. Cuomo (1992–95), congressional districts (New York)

DeGrandy v. Wetherell (1992–94), congressional, senate, and house districts (Florida)

Johnson v. Miller (1994), congressional districts (Georgia)

Jackson, et al v Nassau County Board of Supervisors (1993), form of government (N.Y.)

Gonzalez v. Monterey County, California (1992), county board districts

LaPaille v. Illinois Legislative Redistricting Commission (1992), senate and house districts

Black Political Task Force v. Connolly (1992), senate and house districts (Massachusetts)

Nash v. Blunt (1992), house districts (Missouri)

Fund for Accurate and Informed Representation v. Weprin (1992), assembly districts (N.Y.)

Mellow v. Mitchell (1992), congressional districts (Pennsylvania)

Phillip Langsdon v. Milsaps (1992), house districts (Tennessee)

Smith v. Board of Supervisors of Brunswick County (1992), supervisor districts (Virginia)

People of the State of Illinois ex. rel. Burriss v. Ryan (1991–92), senate and house districts

Good v. Austin (1991–92), congressional districts (Michigan)

Neff v. Austin (1991–92), senate and house districts (Michigan)

Hastert v. Illinois State Board of Elections (1991), congressional districts

Republican Party of Virginia et al. v. Wilder (1991), senate and house districts

Jamerson et al. v. Anderson (1991), senate districts (Virginia)

Ralph Brown v. Iowa Legislative Services Bureau (1991), redistricting database access

Williams, et al. v. State Board of Election (1989), judicial districts (Cook County, Ill.)

Fifth Ward Precinct 1A Coalition and Progressive Association v. Jefferson Parish School Board (1988–89), school board districts (Louisiana)

Michael V. Roberts v. Jerry Wamser (1987–89), St. Louis, Mo., voting equipment

Brown v. Board of Commissioners of the City of Chattanooga, Tenn. (1988), county commissioner districts

Business Records Corporation v. Ransom F. Shoup & Co., Inc. (1988), voting equip. patent

East Jefferson Coalition for Leadership v. The Parish of Jefferson (1987–88), parish council districts (Louisiana)

Buckanaga v. Sisseton School District (1987–88), school board districts (South Dakota)

Griffin v. City of Providence (1986–87), city council districts (Rhode Island)

United States of America v. City of Los Angeles (1986), city council districts

Latino Political Action Committee v. City of Boston (1984–85), city council districts

Ketchum v. Byrne (1982–85), city council districts (Chicago, Ill.)

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(Litigation Support, cont.)

State of South Carolina v. United States (1983–84), senate districts — U.S. Dept. of Justice
Collins v. City of Norfolk (1983–84), city council districts (Virginia) — for Lawyers' Committee for Civil Rights

Rybicki v. State Board of Elections (1981–83), senate and house districts (Illinois)

Licht v. State of Rhode Island (1982–83), senate districts (Rhode Island)

Agerstrand v. Austin (1982), congressional districts (Michigan)

Farnum v. State of Rhode Island (1982), senate districts (Rhode Island)

In Re Illinois Congressional District Reapportionment Cases (1981), congressional districts

Publications

"EAC Survey Sheds Light on Election Administration", *Roll Call*, October 27, 2005 (with Michael McDonald)

Developing a Statewide Voter Registration Database: Procedures, Alternatives, and General Models, by Kimball W. Brace and M. Glenn Newkirk, edited by William Kimberling, (Washington, D.C.: Federal Election Commission, Office of Election Administration, Autumn 1997).

The Election Data Book: A Statistical Portrait of Voting in America, 1992, Kimball W. Brace, ed., (Bernan Press, 1993)

"Geographic Compactness and Redistricting: Have We Gone Too Far?", presented to Midwestern Political Science Association, April 1993 (with D. Chapin and R. Niemi)

"Whose Data is it Anyway: Conflicts between Freedom of Information and Trade Secret Protection in Redistricting", *Stetson University Law Review*, Spring 1992 (with D. Chapin and W. Arden)

"Numbers, Colors, and Shapes in Redistricting," *State Government News*, December 1991 (with D. Chapin)

"Redistricting Roulette," *Campaigns and Elections*, March 1991 (with D. Chapin)

"Redistricting Guidelines: A Summary", presented to the Reapportionment Task Force, National Conference on State Legislatures, November 9, 1990 (with D. Chapin and J. Waliszewski)

"The 65 Percent Rule in Legislative Districting for Racial Minorities: The Mathematics of Minority Voting Equality," *Law and Policy*, January 1988 (with B. Grofman, L. Handley, and R. Niemi)

"Does Redistricting Aimed to Help Blacks Necessarily Help Republicans?" *Journal of Politics*, February 1987 (with B. Grofman and L. Handley)

"New Census Tools," *American Demographics*, July/August 1980

Professional Activities

Member, Task Force on Long Lines in 2012 Election, Prince William County, VA

Member, 2010 Census Advisory Committee, a 20-member panel advising the Director of the Census on the planning and administration of the 2010 census.

Delegate, Second Trilateral Conference on Electoral Systems (Canada, Mexico, and United States), Ontario, Canada, 1995; and Third Trilateral Conference on Electoral Systems, Washington, D.C., 1996

Member, American Association of Political Consultants

Member, American Association for Public Opinion Research

Member, American Political Science Association

Member, Association of American Geographers, Census Advisory Committee

Member Board of Directors, Association of Public Data Users

Member, National Center for Policy Alternatives, Voter Participation Advisory Committee

Member, Urban and Regional Information Systems Association

Historical Activities

Member, Manassas Battlefield Trust Board Member, 2018 -- current

Member, Historical Commission, Prince William County, VA., 2015 – current. Elected Chairman in 2017, re-elected 2018

Member of Executive Committee & head of GIS Committee, Bull Run Civil War Round Table, Centerville, VA. 2015 – current

Member, Washington Capitals Fan Club, Executive Board 2017 -- current

February, 2020